

# Indiana Department of Education

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Office Location: 151 West Ohio Street, Indianapolis

March 29, 2004

To: Technology Education Teachers  
From: Mike Fitzgerald  
Subject: Technology Education Actions/Contexts Model, Page 1 of 2

## **TECHNOLOGY EDUCATION (511 IAC 6-7-6, 511 IAC 6.1-5.1-9 AND 511 IAC 6.1-5-3.5)**

### **INTRODUCTION**

Technology Education is a body of knowledge and an area of study focusing on human endeavors in creating and using tools, techniques, resources, and systems to manage the man-made and natural environments. Students with technological knowledge understand how the human-built world is designed and created and how people can use it to extend their potential. The Technology Education curriculum is designed to help students understand and to participate in the technological society surrounding them.

Curriculum and classroom activities designed for Technology Education provide the knowledge and problem solving skills needed by people in their three major areas of living. A person who has completed a Technology Education program should be able to participate as an **active citizen** through understanding and expressing positions on technological issues such as nuclear power generation, solid waste disposal, and natural resource management. In addition, a person should be able to make wise **consumer choices** including selecting appropriate technology, using it correctly, and disposing of it properly after it has served its purpose. Finally, Technology Education helps people make informed **career choices** by allowing students to participate in a wide array of technological activities which all have career ramifications. Technology Education in Indiana is described as:

**An action-based program for all students to learn how to develop, produce, use, and assess the impacts of products and services that extend the human potential to improve and control the natural and human-made environment.**

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The fundamental objectives for this curriculum area are designed so that each student who participates in the Technology Education program will acquire an understanding of technology as a system in the global context by learning how to:

- Develop and produce technological products, structures, or services to meet human demands and wants.
- Use tools, machines, materials, and energy to produce products, structures, and services.
- Select appropriate technology to solve problems and meet opportunities.
- Appropriately use technology to extend human potential to improve and control our environment.
- Assess the impact of technology on individuals, society, and the environment.
- Use appropriate personal and interpersonal skills to participate in a technological society.

To reach these goals, the program is based on a set of actions that are universal for all technologies. The curriculum structure is comprised of four major sequential stages (introduction, systems, processes, and application) and deals with two key aspects:

- The actions used in developing, producing, using, and assessing technology.
- The contexts where technology is developed and used.

The following two-dimensional matrix illustrates this approach.

**Technological Actions/Contexts Model**

TECHNOLOGICAL ACTIONS	Developing products and systems				
	Producing products and services				
	Using products and services				
	Assessing products and systems				
		Communication	Construction	Manufacturing	Transportation
TECHNOLOGICAL CONTEXTS					

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From: Mike Fitzgerald  
Subject: Technology Education, Manufacturing Processes

## **TECHNOLOGY EDUCATION (511 IAC 6-7-6, 511 IAC 6.1-5.1-9 AND 511 IAC 6.1-5-3.5)**

### **MANUFACTURING PROCESSES**

#### **DOE #4796**

Manufacturing Processes is a specialized course that explores the technological processes used to obtain resources and change them into industrial materials and finished industrial and consumer products. Activities should provide an understanding of the characteristics and properties of industrial material and the processing of materials into consumer goods. The students will investigate the properties of four solid engineering materials: metallics; polymers; ceramics; and composites. After gaining a working knowledge of these materials, students will study six major types of material processes: casting and molding; forming; separating; conditioning; finishing; and assembling. In this course, each of these processes is a major body of content. It is through the study of common principles, supported by related laboratory and problem solving activities, that understanding is developed and reinforced.

- C Suggested Grade Levels: 10-11
- C Recommended Prerequisites: Technology and Manufacturing Systems
- C A one or two credit course over one or two semesters.
- C A Core 40 directed elective as part of a technical career area.
- C Competencies defined.
- C This course is included as a component of the Manufacturing and Processing career cluster and may also be included as a component of the Engineering, Science, and Technologies; and Building and Construction career clusters.